12. *Stachys cordata;* *a*, outer stamens mature; *b*, *c*, *d*, inner stamens mature; *e*, *f*, style in position, stigmas mature.

13. *Brunella vulgaris;* *a*, the flower; *b*, tips of the style and stamens enlarged.

All figures are one-third larger than nature.

Cambridge, Mass.

Description of a new fossil species of the genus Chara.

F. H. KNOWLTON.

Fossils that are now known to belong to the genus Chara were described by Dufourny de Villers, under the name of Vortex, as long ago as 1785.[1] They were regarded by him as small sea-urchins. Later, in 1807, Lamarck[2] described additional forms, under the name of Gyrogonites, which he regarded as minute univalve molluscs. This view obtained quite wide acceptance, and occurs in conchological works of the period,[3] and it was not until 1810 that Léman[4] first recognized and pointed out their true nature. Since that time upward of forty species have been recognized by paleobotanists, mostly from European localities. The only American species, so far as I can learn, is the doubtful *Chara (?) glomerata* described by Lesquereux[5] from the Green River group at Florissant, Colorado. As this species is founded upon leaf impressions, it lacks the precision which characterizes these species established upon the sporostegia or "fruits," as they are universally called by paleobotanists. These fruits are not absent from American deposits, as I am informed by Dr. C. A. White, of the United States Geological Survey, who has collected or observed them at various localities in the western territories; but they have generally been overlooked or neglected by collectors. I describe below a species which appears to be new.

Chara compressa n. sp. (figs. 1, 2).

Fruit (sporostegium) longitudinally much depressed, the height nearly one-fifth less than the width; apex obtuse or even slightly depressed; number of spirals, as observed in side view, ten.

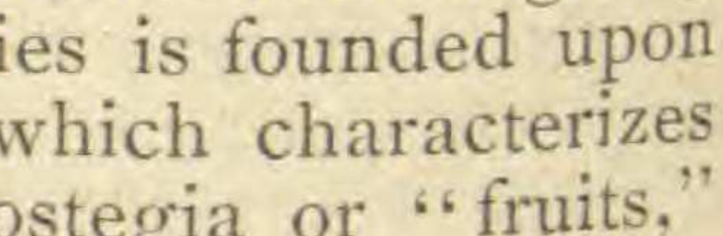

Fig. 1. Fig. 2.

CHARA COMPRESSA, n. sp.

[1] Mem. l'Acad. Jun. 1785.
[2] Ann. d. Mus. d'hist. nat. vol. ix, 1807, p. 236, pl. xvii, fig. 7.
[3] Denys de Montfort. Conchylologie systematique.
[4] Ann. d. Mus. d'hist, nat. vol. xv, 1810, pl. 23. fig. 12.
[5] Cretaceous and Tertiary Floras, 1883, p. 135. pl. xxi. fig. 12.

Collected by Dr. C. A. White, two miles west of Wales, Utah, near old coal opening. The formation from which this species comes is the Wasatch group, the extreme lower member of the Tertiary, regarded by Dr. White as the equivalent of the Bitter Creek group of Powell, and the Vermillion Creek group of King. The matrix is a dark gray shale, weathering nearly white. The fruits are exceedingly numerous, and, in the weathered specimens, stand out in full relief, as they are much harder than the matrix.

This species bears considerable resemblance to some of the species described by Watelet[6] from the Paris basin, particularly *Chara depressa* and *C. onerata*. It differs from the former, which has only seven turns of the spiral visible in side view, and from the latter by its smaller size and also in the number of turns.

U. S. National Museum.

BRIEFER ARTICLES.

Veronica peregrina.—It may not be safe to lay it down as a rule, but there is no doubt in my mind that when we find almost every flower on a plant fertile, that plant may be classed as a self-fertilizer. It may be that cross-fertilization is a benefit to the race in the long run; the fact remains that where flowers are so arranged as to require external agency in poliination, the agents often fail to do the work, and numberless flowers are infertile. It is said by those who believe clover requires cross-fertilization that the flowers are barren in New Zealand and other places where the proper insect agents do not exist.

Almost all our common weeds, from this stand-point, would be self-fertilizers. Rarely, indeed, does a flower fail to produce seed. When we examine them closely we find that they are often so arranged that self-pollination alone is possible. Veronica peregrina is a good illustration. The two stamens are alternate with the upper lobe and bend over so that the anthers seem deposited on the apex of the stigma. The pollen-sacs burst almost simultaneously with the expansion of the corolla. The stigma is in receptive condition at the same time, and becomes covered with own-pollen. It would be difficult to conceive of any better arrangement for securing self-fertilization, aside from cleistogamy.—THOMAS MEEHAN.

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[6] Descrip. d. pl. Foss. d. Bassin de Paris. Paris, 1866. pp. 50–56, pl. 15.